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A transcriptionally active DNA-binding site for human p53 protein complexes.

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Recent studies have demonstrated transcriptional activation domains within the tumor suppressor protein p53, while others have described specific DNA-binding sites for p53, implying that the protein may act as a transcriptional regulatory factor. We have used a reiterative selection procedure (CASTing: cyclic amplification and selection of targets) to identify new specific binding sites for p53, using nuclear extracts from normal human fibroblasts as the source of p53 protein. The preferred consensus is the palindrome GGACATGCCCGGGCATGTCC. In vitro-translated p53 binds to this sequence only when mixed with nuclear extracts, suggesting that p53 may bind DNA after posttranslational modification or as a complex with other protein partners. When placed upstream of a reporter construct, this sequence promotes p53-dependent transcription in transient transfection assays.

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